

Draft Rule 317 - July 21, 2005

Contact Hilary R Hartline at 602-506-3476 or by E-mail at HHartline@mail.maricopa.gov

Comments due by August 19, 2005

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 317

HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS

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**MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS**

REGULATION III - CONTROL OF AIR CONTAMINANTS

**RULE 317
HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATORS**

SECTION 100 - GENERAL

101 PURPOSE: To control emissions of air pollutants from Hospital/Medical/Infectious Waste incinerators.

102 APPLICABILITY: A Hospital/Medical/Infectious Waste Incinerator (HMIWI) commenced on or before June 20, 1996, or for which construction commenced on or before June 20, 1996, shall comply with this rule unless it fits any one of the following exceptions:

102.1 A combustor is not subject to this rule when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned, provided the owner or operator of the combustor:

- a.** Notifies the Control Officer of an exemption claim; and
- b.** Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, and/or chemotherapeutic waste is burned.

102.2 Any co-fired combustor is not subject to this rule if the owner or operator of the co-fired combustor:

- a.** Notifies the Control Officer of an exemption claim;
- b.** Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and/or wastes to be combusted; and
- c.** Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.

102.3 Any combustor required to have a permit under Title 42, United States Code Section 6925, Section 3005 of the Solid Waste Disposal Act is not

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subject to this rule.

102.4 Any combustor which meets the applicability requirements under 40 C.F.R. 60, Subparts Cb, Ea, or Eb (standards or guidelines for certain municipal waste combustors) is not subject to this rule.

102.5 Any pyrolysis unit is not subject to this rule.

102.6 Cement kilns firing hospital waste or medical/infectious waste are not subject to this rule.

102.7 Physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with emission guidelines under this rule are not considered a modification and do not result in an existing HMIWI unit becoming subject to the provisions of 40 C.F.R. 60, Subpart Ec.

103 **AVAILABILITY OF INFORMATION:** Copies of 40 C.F.R. 60, Subpart Ec are available at 1001 N. Central Avenue, Phoenix, Arizona, 85004, or call (602) 506-6700 for information.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply:

- 201** **BATCH HMIWI** - An HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.
- 202** **BIOLOGICALS** - Preparations made from living organisms and their products. This includes vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.
- 203** **BLOOD PRODUCTS** - Any product derived from human blood, including, but not limited to, blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.
- 204** **BODY FLUIDS** - Liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and semen and vaginal secretions.
- 205** **BYPASS STACK** - A device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.
- 206** **CHEMOTHERAPEUTIC WASTE** - Waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.
- 207** **CO-FIRED COMBUSTOR** - A unit combusting hospital waste and/or medical/infectious waste with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting

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a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.

- 208 CONTINUOUS HMIWI** - An HMIWI that is designed to allow waste charging and ash removal during combustion.
- 209 CREMATORY** - An incinerator used for the cremation of human and animal bodies, their body parts, and for the incineration of associated animal bedding.
- 210 DIOXINS/FURANS** - The combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by EPA Reference Method 23, found in 40 C.F.R. Part 60, Appendix A, and incorporated by reference per Section 301 of this rule.
- 211 HOSPITAL** - Any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.
- 212 HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATOR OR HMIWI OR HMIWI UNIT** - Any device that combusts any amount of hospital waste or medical/infectious waste.
- 213 HOSPITAL/MEDICAL/INFECTIOUS WASTE INCINERATOR OPERATOR OR HMIWI OPERATOR** - Any person who operates, controls or supervises the day-to-day operation of an HMIWI.
- 214 HOSPITAL WASTE** - Discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.
- 215 INFECTIOUS AGENT** - Any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.
- 216 INTERMITTENT HMIWI** - An HMIWI that is designed to allow waste charging, but not ash removal, during combustion.
- 217 LARGE HMIWI:**

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217.1 Except as provided in 217.2:

- a. An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour; or
- b. A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or
- c. A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.

217.2 Each of the following is not a large HMIWI:

- a. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or
- b. A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.

218 LOW-LEVEL RADIOACTIVE WASTE - Waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or state standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2)).

219 MAXIMUM CHARGE RATE:

- a. For continuous and intermittent HMIWI, 110 percent of the lowest 3-hour average charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.
- b. For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent performance test demonstrating compliance with all applicable emission limits.

220 MAXIMUM DESIGN WASTE BURNING CAPACITY:

- a. For intermittent and continuous HMIWI, $C = P_v \times 15,000 / 8,500$
Where:
C = HMIWI capacity, lb/hr
 P_v = primary chamber volume, ft³
15,000 = primary chamber heat release rate factor, Btu/ft³ /hr
8,500 = standard waste heating value, Btu/lb.

- b. For batch HMIWI, $C = P_v \times 4.5 / 8$
Where:
C = HMIWI capacity, lb/hr

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P_v = primary chamber volume, ft^3

4.5 = waste density, lb/ft^3

8 = typical hours of operation of a batch HMIWI.

221 MEDICAL/INFECTIOUS WASTE - Any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in subsections 221.1 through 221.7 of this rule. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 C.F.R. Part 261; household waste, as defined in 40 C.F.R. 261.4(b)(1); ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment; cremation; and domestic sewage materials identified in 40 C.F.R. 261.4(a)(1). Medical/infectious waste does include:

221.1 Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.

221.2 Human pathological waste, including tissues, organs, and body parts and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.

221.3 Human blood and blood products including:

- a. Liquid waste human blood;
- b. Products of blood;
- c. Items saturated and/or dripping with human blood; or
- d. Items that were saturated and/or dripping with human blood that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also included in this category.

221.4 Sharps that have been used in animal or human patient care or treatment or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.

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221.5 Animal waste including contaminated animal carcasses, body parts, and bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.

221.6 Isolation wastes including biological waste and discarded materials contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly communicable diseases.

221.7 Unused sharps including the following unused, discarded sharps: hypodermic needles, suture needles, syringes, and scalpel blades.

222 MEDIUM HMIWI:

222.1 Except as provided in subsection 222.2:

- a. An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or
- b. A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or
- c. A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.

222.2 The following are not medium HMIWI:

- a. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or
- b. A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.

223 PATHOLOGICAL WASTE - Waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

224 PYROLYSIS - The endothermic gasification of hospital waste or medical/infectious waste using external energy.

225 SHUTDOWN - The period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less

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than 2 hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than 4 hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than 5 hours after the high-air phase of combustion has been completed.

226 SMALL HMIWI:

226.1 Except as provided in subsection 226.2:

- a. An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour; or
- b. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or
- c. A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.

226.2 The following are not small HMIWI:

- a. A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour; or
- b. A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.

SECTION 300 - STANDARDS

- 301 HMIWI STANDARDS:** An existing HMIWI covered by this Section shall comply with 40 C.F.R. 60, ~~subpart~~ Subpart Ec, as modified by this subsection. 40 C.F.R. 60, Subpart Ec "Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996" is incorporated by reference in Rule 360 of the Maricopa County Air Pollution Control Regulations.
- 302 HMIWI EMISSIONS GUIDELINES:** An HMIWI shall comply with the emissions guidelines in Table 1 listed below:

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Table 1
Emission Limits for Small, Medium, and Large HMIWI

Pollutant	Units (7% oxygen, dry basis)	Emission Limits		
		HMIWI size		
		Small	Medium	Large
Cadmium	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	0.16 (0.07) or 65%	0.16 (0.07) or 65%	0.16 (0.07) or 65%
Carbon monoxide	Parts per million by volume	40	40	40
Dioxins/furans	Nanograms per dry standard cubic meter total dioxins/furans (grains per billion dry standard cubic feet) or nanograms per dry standard cubic meter TEQ (grains per billion dry standard cubic feet)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)	125 (55) or 2.3 (1.0)
Hydrogen chloride	Parts per million by volume or percent reduction	100 or 93%	100 or 93%	100 or 93%
Lead	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	1.2 (0.52) or 70%	1.2 (0.52) or 70%	1.2 (0.52) or 70%
Mercury	Milligrams per dry standard cubic meter (grains per thousand dry standard cubic feet) or percent reduction	0.55 (0.24) or 85%	0.55 (0.24) or 85%	0.55 (0.24) or 85%
Nitrogen oxides	Parts per million by volume	250	250	250
Particulate matter	Milligrams per dry standard cubic meter (grains per dry standard cubic foot)	115 (0.05)	69 (0.03)	34 (0.015)
Sulfur dioxide	Parts per million by volume	55	55	55

303 OPACITY: No owner or operator of an HMIWI shall cause to be discharged into the atmosphere from the stack of that HMIWI any gases that exhibit greater than 10 percent opacity (6-minute block average) or darker than 20 percent opacity for an aggregate of more than 30 seconds in any consecutive 60 minutes.

304 LARGE HMIWI OPACITY: A large HMIWI shall comply with the opacity requirements as specified in 40 C.F.R. 60, Section 60.52c (c),(d), and (e).

305 NIGHT BURNING: No person shall operate a medical waste incinerator between sunset and the following sunrise unless a continuous opacity (particulate) recorder is operating at all times when there is any combustion within the incinerator. Such

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recorder shall be in compliance with subsection 501.1 of this rule.

- 306 INCORPORATION BY REFERENCE:** All C.F.R. references as of July 1, ~~2002~~ 2004 that are listed below and in various sections of this rule are adopted by reference. These adoptions by reference include no future editions or amendments. Copies of these C.F.R. references are available at Maricopa County ~~Environmental Services~~ Air Quality Department, 1001 N. Central Ave., Suite 201, Phoenix, AZ, 85004-1942.

40 C.F.R. Part 60, Subpart ~~EE~~ Ec
40 C.F.R. Part 60, Section 60.52~~c~~(c), (d), and (e)
40 C.F.R. Part 60, Section ~~60.56(e)~~ 60.56c
40 C.F.R. Part 60, Section 60.57c
40 C.F.R. Part 60, Section 60.58c(b), ~~(c)~~, (d), (e), and (f)
40 C.F.R. Part 60, Appendix A and Appendix B
40 C.F.R. Part 70

- 307 EXEMPTIONS:** HMIWI subject to this Section are not subject to Rule 313.

307.1 Any co-fired combustor or combustor that is not subject to this rule is still subject to Rule 313. (See Applicability, subsections 102.2, 102.3 and 102.4 of this Rule 317.)

307.2 A crematory whose incinerator burns only human remains is not a HMIWI and is not subject to this rule. It is subject to Rule 313. However, if the incinerator burns 10 percent or less of hospital waste and medical/infectious waste, it is a co-fired combustor subject only to notification and recordkeeping requirements, as specified in subsection 102.2 of this rule. If the incinerator burns more than 10 percent hospital waste and medical/infectious waste, it is subject to all of the requirements of this rule.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

- 401 COMPLIANCE SCHEDULE:** Beginning either September 15, 2000, or on the effective date of an EPA approved operating permit program under Clean Air Act Title V and the implementing regulations under 40 C.F.R. Part 70 in Arizona, whichever date is later, designated facilities subject to this rule shall operate pursuant to a permit issued under the EPA-approved operating permit program.

SECTION 500 - MONITORING AND RECORDS

- 501 PROVIDING AND MAINTAINING MONITORING DEVICES:** Except as provided in Section 502, all requirements for compliance and performance testing listed in 40 C.F.R. 60.56c shall be required of each HMIWI, excluding the fugitive emissions testing requirements under Sections 60.56c(b)(12) and (c)(3).

501.1 Any person subject to Section 304 of this rule shall operate and maintain all of the following continuous data recording systems. All required systems

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shall be completely and properly operating during all periods of combustion within the incinerator, and each shall include a real-time recording device that creates a clear, legible record at all times of operation.

501.2 Opacity of stack emissions or other indicator of particulate matter which is approved by the Control Officer. Pursuant to Section 305 of this rule, any incinerator burning after sunset must be equipped with a continuously recording opacity monitor, regardless of capacity. The opacity monitor shall be located after (downstream of) all control equipment, prior to the stack exit, and prior to any dilution with ambient air. The opacity monitor shall at all times comply with EPA Performance Specification 1 (40 C.F.R., Part 60, Appendix B) and shall be calibrated no less than once each day.

502 RECORDKEEPING AND REPORTING: Each HMIWI shall comply with the requirements listed in 40 C.F.R. 60.58c(b), (c), (d), (e), and (f), excluding 40 C.F.R. 60.58c(b)(2)(ii) (fugitive emissions) and (b)(7) (siting).

503 HMIWI MONITORING REQUIREMENTS: An existing HMIWI shall comply with the monitoring requirements of Section 60.57c of Subpart Ec.